

DESICCANT DEHUMIDIFICATION SYSTEM

ABSTRACT OF THE DISCLOSURE

A desiccant dehumidification system uses an air heater incorporating air feedback from the exhaust and/or the return air fans. The air and gas are mixed in a single step, two step, or continuous modulation mixing valve. An outdoor cooking grill style burner allows a small unit to be made with tight air heating system. One system cools the return air making it cool and humid. A portion of this air is then dried by a desiccant dehumidification system which makes hot and dry output air. The remaining return air is then dried by desiccant dehumidification system output air to deliver processed air in a controlled comfort range. A second system mixes return air with fresh air making mixed return air which is dried in a desiccant dehumidification system and then cooled to a desired comfort range without condensation.